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EXAMINER

RUTLAND WALLIS, MICHAEL

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/828,496
Filing Date: April 21, 2004
Appellant(s): BOLTZE ET AL.

David S. Safran
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/19/2007 appealing from the Office action mailed 5/15/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,177,736	Raiser	1-2001
6,881,509	Jungreis	4-2005
7,119,454	Chiao	10-2006
6,125,798	Kuwayama et al.	10-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-2, 5-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raiser (U.S. Pat. No. 6,177,736) in view of Jungreis (U.S. Pat. No. 6,881,509)

With respect to claim 1, 5-7 and 11 Raiser teaches a system and process for operating an electrical consumer (not shown connected to Vout terminals) with electrical power (DC voltage), comprising the steps of: delivering a DC voltage generated by a fuel cell (item 12) auxiliary power unit to a DC/DC converter (item 10), converting a portion (Vout2) of the DC voltage generated by the fuel cell auxiliary power unit to a voltage that is matched to the voltage of the vehicle electrical system (col. 4 lines 14-

16). Raiser also teaches the use of a second output connection (item 16) to provide a high voltage DC bus to power load requiring significantly more power typical than a typical 12 volt DC bus in a vehicle. Raiser utilizes a typical microcontroller based PWM signal to control output voltage. Raiser does not teach the second output connection is unconverted at the second output; however does note the PWM rate may be adjusted to match any desired voltage output (col. 3 lines 10-17). Jungreis teaches a fuel cell power unit (Fig. 4) and a connection to a consumer (Aux power item 20) which is unconverted in order to reduce the cost and size of the fuel cell power system (col. 2 lines 30-50). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a two output of a DC converter wherein one output is to a consumer wherein an unconverted voltage is supplied in order to reduce the complexity thereby reducing the costs of the power conditioning of the converter when the output voltage of the fuel cell is the same voltage of the load connected thereto (see col. 3 lines 47-50 and col. 2 lines 20-35).

With respect to claims 2 and 8 Raiser teaches the at least one consumer is a high wattage consumer (400VDC at 195 amps).

Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raiser (U.S. Pat. No. 6,177,736) in view of Jungreis (U.S. Pat. No. 6,881,509) as applied to claims 2 and 8 above, and further in view of Chiao (U.S. Pat. No. 6,119,454)

With respect to claim 3 and 9 Raiser as modified above does not detail examples of particular loads which may be connected to the high wattage connection, however compressor motors are commonly found in vehicles to power vehicle climate systems,

see for example Chiao (col. 3 lines 15-30) teaches the connection an air condition compressor to a vehicle electrical HVDC bus. It would have been obvious to one of ordinary skill in the art at the time of the invention to connect such a load in order to provide air conditioning to the occupants of the vehicle.

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raiser (U.S. Pat. No. 6,177,736) in view of Jungreis (U.S. Pat. No. 6,881,509) as applied to claims 1 and 6 above, and in view of Chiao (U.S. Pat. No. 6,125,798) as applied to claims 3 and 9 above, and in further view of Kuwayama et al. (U.S. Pat. No. 6,125,798)

With respect to claims 4 and 10 Raiser as modified above does not detail the control a compressor motor for an air conditioning compressor. Kuwayama teaches control of a motor for air conditioning independently. Kuwayama teaches a PWM signal to maintain a constant wattage independently of the compressor motor. It would have been obvious to one of ordinary skill in the art at the time of the invention to control the compressor independently in order to maintain a constant temperature.

(10) Response to Argument

Appellant first argues Raiser and Jungreis fail teach or suggest a DC/DC converter having a second output for delivering unconverted electrical power," as required by independent claim 1; and the limitation "providing some of the electrical power delivered from the fuel cell auxiliary power unit to at least one electrical consumer

via said DC/DC converter without conversion by the DC/DC converter," as required by independent claim 6.

In response Raiser teaches a DC converter with a first and second output of electrical power. Raiser also teaches one may adjust the output voltages of the DC/DC converter as needed (col. 4 lines 14-16). Raiser does not disclose a teaching of an output from the converter, which is unconverted. Jungreis teaches in figure 4, an output from a fuel cell, which is converted and supplied to a load. Jungreis further teaches one may instead regulate the fuel cell for example (col. 2 lines 20-35) and provide a voltage which is not converted with the DC/DC converter. The unconverted output voltage of Jungreis is supplied to a load in such a way that a less expensive power conditioning system may be utilized. Jungreis further points out the efficiency is increased since no power electronics are between the fuel cell and the load are present (col. 3 lines 47-50). The arrangement to have the unconverted line pass through the converter module would have been obvious to one of ordinary skill in the art to in order supply a load with power that has not been converted in order to reduce the complexity of the power conditioning system thereby reducing the costs and increase the efficiency of the second output electrical power. Appellant's argument is directed to the boundary of the DC/DC converter box, not the utility of using a DC/DC converter and unconverted channel in a power condition system. Further Appellant's unconverted channel never actually passes through the converter, since it is not converted, merely the channel passes through the box Appellant has indicated the DC/DC converter to be.

Appellant secondly argues the motivation for the combination of teachings of Raiser with Jungreis is based on impermissible hindsight.

In response Jungreis (col. 2 lines 20-35) discloses by connecting loads via an unconverted channel the range of input voltages at the converter may be reduced, resulting in a less expensive converter. Jungreis further discloses since no power electronics are between the source and the load efficiency can increase and the size of the electronics may be reduced (col. 3 lines 47-50). Since the motivation is found within the cited references the motivation used in the combination of Raiser with Jungreis is not impermissible hindsight.

Appellant lastly argues Jungreis expressly teaches away from the combination made. In support of Appellant's argument Appellant cites col.3 lines 58-67 of Jungreis.

In response to Appellant's last argument; there is nothing in the cited text or elsewhere in Jungreis, which expressly teaches away from the connection of an unconverted channel in the converter system of Jungreis. Appellant's argument lies in the boundary of the DC/DC converter box. The use and connection of an unconverted channel in a conversion system has benefits as Jungreis points out.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 2800

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Michael J Sherry/

Supervisory Patent Examiner, Art Unit 2836

/Michael Rutland-Wallis/

Examiner, Art Unit 2836

Conferees:

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